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STEEL INDUSTRY REPORTS NEW DEVELOPMENTS; LENINGRAD SCRAP PLAN LAGS

/Numbers in parentheses refer to appended sources./

In late February and throughout March, Soviet ferrous metallurgy continued the drive for increased production, improved technology, and better service from equipment.

In the field of new technology, a group of specialists, headed by B. S. Mil'man and A. A. Vasilenko, has been awarded the Stalin Prize for developing the technology for production of a super-strong pig iron which is highly adaptable for use in the production of a number of main machine parts.(1)

Another group of engineers, headed by S. Levi and representing the Moscow "Dinamo" Plant, "Leningradskiy vodnik" Plant, the Riga Shipbuilding Plant, the Gomel' Ship-Repair Plant, and "Giprorechtrans" (State Institute for Planning and Research for the River Fleet), was awarded the Stalin Third Prize for developing and adopting to production the use of an oxygen blast in smelting pig iron, obtaining a high-grade product.(2) The Riga plant started using the oxygen blast in smelting high-grade pig iron in 1949. The method was originated, tested, and improved at the plant. After the war, the plant found it necessary to produce its own pig iron because of its tremendous need for it in repairing and rebuilding the republic's fleet. At first plagued by a shortage of coke and insufficient manpower, plant engineers overcame these difficulties after much research, resulting in the adoption of the above method. The plant engineers who worked on this project and who were awarded the Stalin Third Prize include Nechiporenko, Lavrusevich, Belousov, and L. Prutyan, director of the plant.(3)

In 1949, the Ferrous Metallurgy Institute of the Academy of Sciences Ukrainian SSR gave scientific assistance to more than 40 enterprises. M. V. Lugovtsov, director of the institute and Active Member of the Academy of Sciences Ukrainian SSR, developed and introduced into the Metallurgical Plant imeni Stalin in Stalino a new and valuable method of smelting pig iron in magnesian slags.(4)

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Several new developments in metallurgy have been noted in Leningrad. The city's enterprises are making increasingly extensive use of the method of casting iron, steel, and nonferrous metals under gas or air pressure. The idea was first discovered by the metallurgist Chernov at the end of the 19th Century, and since then, Soviet scientists and foundry workers have developed the technology for the method and introduced it into production. The pressure on the molten metal in the molds is created by the use of special gas-generating substances which disintegrate at high temperatures or by the use of compressed air from a compressor. The problem of utilization and further improvement of this method of casting was discussed at a city conference called by the House of Technicians and the Leningrad Division of the Scientific Engineering and Technical Society of Foundry Workers. Prof Yu. A. Nekhendzi, Laureate of the Stalin Prize, Prof N. G. Yershovich, and engineers from Leningrad plants told the conference of the practical utilization of the method and its advantages in sharply increasing the quality of iron castings, halving defective production in steel casting, decreasing costs, and speeding the production cycle. The conference made the decision to develop further the cooperation between scientists and foundry workers for the purpose of continually increasing the quality of castings.(5)

Cooperation between Leningrad scientists and electric steel workers has resulted in improvements in the technology of electric-steel smelting. A year has passed since the electrical steel workers of Leningrad enterprises entered a competition for higher production. The results of this drive have been favorable and are the results of close cooperation between the city's scientists and industrial workers. At present, the majority of electric steel furnaces in the city are operating according to up-to-date methods and have achieved high performance indexes. The Nevskiy Plant imeni Lenin has been the leader in improving electric-steel furnace performance.

Workers in one plant proved in practice the method, developed by scientists, of speeding the melt in electric furnaces while decreasing the consumption of electric power. The method was not only tested and proved, but improved upon in the Plants imeni Lenin and Kirov. Until recently, it was believed that the physical makeup of the charge did not permit an increase in the charge during the smelting period. The experience of Leningrad steelworkers showed, however, that the charge capacity can be increased by 50-100 percent. Further experiments showed the possibility of both further increasing the capacity and decreasing the length of the melt. This new method is being widely put into practice now.

Workers in the electric-furnace section of the Kirov Plant noticed that electric steel, smelted under an alumina slag, contains considerably less harmful gases. Prof P. Ya. Ageyev, by studying the phenomenon, was able to establish the principle behind it, and thus a further step in improving electric steel quality was made.

A reversal of the ideas on the durability of the lining of the roof and walls of the basic arc furnace was made by workers from the excavator plant. They showed that, given the correct structure of the lining and careful operation of the furnace, an increased number of high-speed melts not only does not decrease the durability of the roof and walls, but rather helps to increase their length of service. The durability of the roof of such a furnace exceeds the usual durability by 200-300 percent.

The experiments of leading steelworkers in increasing the durability of furnace lining, while at the same time systematically increasing high-speed smelting, are of particular importance in that they disprove the theory, having some weight among metallurgists, that furnace durability is decreased as the smelting process is intensified. Steelworkers have disproved this theory, and have increased durability without the use of any new or more modern types of refractories. Thus, cooperation has had extremely important results in improving the quality of electric steel in high-speed melts, and the problem of removing harmful impurities -- sulfur and phosphorus and injurious gases -- has been solved. Among the tasks for

both workers and scientists in 1950 are a further increase in the productivity of electric furnaces, improvement in quality, and adoption of the production of new types of steel, particularly alloy and high-alloy steel.(6)

The Kirov Plant also reports significant strides in open-hearth smelting as well as electric. Open-hearth shop workers at the plant are prepared to enter the competition with the three leading workers of the Moscow "Serp i molot" Plant. The Kirov steelworkers have been obtaining a record 300 melts per furnace run between repairs, as compared with the norm of 240 melts, and each high-speed melt is completed in 9 hours, as compared with the norm of 11 hours. The shop considers a melt high-speed which produces no less than 7.25 tons of steel per square meter of hearth. In their first experience with high-speed operations, the workers found that the roof tended to overheat during the first melts because the workers did not observe correct temperature control. Practice showed that if the first few melts can be made carefully, without the roof's overheating, its durability is increased from then on, and the furnace run lengthened.

Included in the competition pledge of the Kirov steelworkers is a plan to increase the durability of the furnace roof to 270 melts as a year average, as compared with 240, to increase the recovery of steel per square meter of hearth to 7 tons as a year average, as compared with the norm of 5.85 tons, and to decrease the consumption of fuel per ton of steel by 5 kilograms below the norm. The plant is also collaborating with the Leningrad Polytechnical Institute on the problem of decreasing the sulfur content of the finished metal.(7)

In Moscow, the three recent Stalin Prize winners of the "Serp i molot" Plant -- Subbotin, Mikhaylov, and N. Chesnokov -- have set new goals for themselves in operating furnace No 4, open-hearth shop No 1. They plan to increase the durability of the dinas brick roof of the furnace to 250 melts as a year average. The average shop index for roof durability in 1949 was 199 melts. The goal for recovery of steel per square meter of furnace hearth is set at 9 tons as a year average, as compared with the norm of 7.9 tons. The workers hope to reduce the consumption of fuel per ton of smelted steel to 210 kilograms.

The last goal of the pledge is the utilization of the new automatic instrument which regulates the charging of fuel into the furnace in accordance with the temperature of the roof. The steelworkers are working with plant engineers in developing this new instrument. Until now, control of the charging of mazut was performed by the steelworkers. Even with utmost care, the roof sometimes overheated. The new instrument will automatically regulate fuel charging in accordance with the temperature of the roof, so that if the roof heats up to the point where even the slightest addition of fuel would cause it to melt, the instrument will automatically stop the charging.

Since the beginning of 1950, the three shifts of workers operating furnace No 4 have smelted 1,200 tons of steel above plan.(8)

Workers in the plant's open-hearth shop No 2 are following the example of the three Stalin Prize winners in shop No 1 in working for longer durability of the furnace and increased production. Workers at furnace No 5, for example, have declared it possible to increase the durability of the open-hearth furnace to 300 melts between repairs and to increase the recovery of steel to 11 tons per square meter of furnace hearth. One of the workers at this furnace recently set a record of 16.5 tons per square meter of hearth in two high-speed melts during one shift.(9)

A group of workers in Moscow metallurgical enterprises have been honored by the state for their long years of service and excellent work. Orders and medals were awarded on 29 March by N. M. Shvernik, chairman of the Presidium of the Supreme Soviet USSR, to a group of metallurgical workers, including workers in the advanced professions, foremen, administrative and engineering and technical workers, of the "Serp i molot" Plant, Moscow Nonferrous Metal Processing Plant,

Plant imeni Molotov, and of the central administration of the Ministry of the Metallurgical Industry. Among the "Serp i molot" recipients of the Order of Lenin was A. I. Naprasnikov, chief of the division of "Glavkoks" (Main Coke Administration) at the plant.(10)

The "Krasnyy metallurg" Plant in Liyepaya, Latvian SSR, has been setting new steel-smelting records. One steelworker completed a melt on 13 March in 6 hours 30 minutes, as compared with the norm of 8 hours. An even higher record of 5 hours 40 minutes was achieved a few days later.(11)

The open-hearth shop of the Kazakh Metallurgical Plant in Temir Tau has also become a shop of high-speed and heavy-weight melts, and at the same time has sharply increased the recovery of steel per square meter of furnace hearth. The planned capacity of the open-hearth furnaces has actually been exceeded by 60 percent. This increase was due to the introduction of a new schedule of operations which provides for the independent conduct of each melt by the steelworker, from charging the furnace to pouring out the finished steel. All steelworkers have been exceeding their shift norms 30 to 50 percent in working on the new schedule.(12)

In January, February, and 12 days of March, the plant fulfilled the plan for steel output 108 percent and for rolled metal output 117 percent. Labor productivity is 18 percent above plan. High-speed smelters have reduced the smelting time to 6 hours 15 minutes.(13) The plant has already completed the first-quarter plan for the entire metallurgical cycle.(12)

In Chita Oblast, the Petrovsko-Zabaykal'skiy Metallurgical Plant considerably exceeded the plan for the first 4 years of the current Five-Year Plan and in the last 2 years increased production output 57 percent, a success achieved through improvements made in the technology of production. In the open-hearth shop, furnaces No 3 and No 2 are leading.(14)

In mid-March, leading blast-furnace workers in the Kuznetsk Metallurgical Combine, Kemerovo Oblast, obtained a coefficient of 0.81 for capacity utilization of the furnace, as compared with the mean progressive norm of 0.87.(15) The combine's sheet-rolling shop has almost completely eliminated defective production. Each mistake which leads to defective work is brought up and discussed in workers' conferences, thereby increasing the responsibility of the worker and improving quality.(6)

The Stalingrad "Krasnyy Oktyabr'" Plant is also striving to lengthen the service of its furnaces. Steelworkers of open-hearth furnace No 10 have pledged to increase the durability of the furnace roof to withstand 220 melts and the checkered brickwork to 440 melts between capital repairs. This goal will help to increase the production of steel by 4,000 tons for each furnace run between repairs.(16)

Certain furnaces in the Dneprodzerzhinsk Plant imeni Dzerzhinskiy are equipped with the new and durable chromo-magnesite roof, for the design of which plant engineers Korchenko and Bliznyukov were awarded the Stalin Prize. Workers at these furnaces have recently obtained record high melts, one as high as 11.11 tons per square meter of hearth, as compared with the progressive norm of 7.8 tons.(17)

Workers at the plant's blast furnace No 7 have brought the coefficient for capacity utilization of the furnace to 0.81, as compared with the planned 0.92. On 22 March, it was reported that at furnace No 1 the coefficient is 0.61 as compared with the planned 0.7.(18) On 24 March, the report stated that operators of furnace No 1 had obtained a record high of one ton of pig iron per 0.48 cubic meter of furnace capacity, the highest coefficient achieved this year for furnace No 1.(19)

A steelworker in the open-hearth shop of the Dnepropetrovsk Plant imeni Lenin has achieved a record yield of 8 tons of steel per square meter of hearth, as compared with the progressive norm of 5 tons.(20) A leading steelworker in open-hearth shop No 3 of the Dnepropetrovsk Plant imeni Petrovskiy recently obtained a record of 10.2 tons of steel per square meter of hearth, as compared with the norm of 6 tons.(21)

In February, two leading rolling-mill brigades in the pipe-rolling shop of the Plant imeni K. Libknekht, Dnepropetrovsk Oblast, set a new record for rolling 10-inch pipe. The workers each rolled 80 10-inch pipes in one shift, exceeding the previous record by ten pipes per worker. The stakhanovites also rolled a record 234 6-inch pipes per shift. On 19 February, they rolled 161 10-inch pipes on two rolling mills. By better coordination with the soaking pits and the piercing mill, the mills are now operating at high speed. Instead of eight 10-inch pipes per hour, workers are now each able to roll 10 or 11 per hour.(22)

In comparing the results of the current pre-May Day production effort with that of 1949, the sheet-rolling shop of the "Azovstal'" Plant found that the hourly productivity of the rolling mill had increased by almost 2 tons over 1949, when many of the operations were done by hand. At present, all operations, from the charging of the ingots into the soaking pits to the transport of the rolled product to the finished-goods warehouse, are mechanized.

In open-hearth shop No 3, results have been just as outstanding. A year ago, a production of 5 tons per square meter of furnace hearth was a rare occurrence, whereas in March 1950, the average yield was 6.5 tons. Daily norms are being exceeded by 30 percent during the present May-Day drive.(6) One high-speed steelworker at the plant recently obtained a record production of 12.2 tons of steel per square meter of hearth, almost 3 tons above the plan. A worker at the tilting furnace completed a heavy melt in 12 hours 20 minutes, as compared with the scheduled $15\frac{1}{2}$ hours.(23) All workers in the rail mill are currently exceeding the progressive norms.(24)

Workers at the plant's large blast-furnace No 3 have also set a production record in the pre-May Day drive. Operating the furnace at increased rates for the entire period, they obtained 257 tons above the progressive norm in one day. For 10 days, the workers have been operating by improved methods, such as careful preparation of the charge for smelting, and have been producing 40-50 tons of pig iron above plan per day. The coefficient for capacity utilization of the furnace during that time was 0.89, as compared with the progressive norm of 1.08. High-speed work methods have been introduced in all sections of the blast-furnace conveyer line.(25)

A leading brigade at the Yenakiyevo Metallurgical Plant, Stalino Oblast, recently obtained a record of one ton of pig iron per 0.82 cubic meter of blast-furnace capacity, as compared with the planned coefficient of 1.0. The furnace was operated at an increased temperature. In operating a large mechanized blast furnace at the same plant, one worker achieved an average coefficient of 0.93.(26)

In line with the Moscow "Serp i molot" Plant production drive, Magnitogorsk steelworkers have entered a new competition with the goal of 10 tons of steel per square meter of open-hearth furnace hearth, considerably above the progressive norm, as an average for the entire year.(27) The pre-May Day goal for steel production at the combine has also been set at 10 tons per square meter of furnace hearth, and workers have pledged to save 5 kilograms of fuel for each ton of smelted steel.(28)

Using high-speed methods, a steelworker at the Kushva Metallurgical Plant, Sverdlovsk Oblast, recently cut the smelting time by $2\frac{1}{2}$ hours and obtained 11 tons of steel per square meter of hearth instead of the norm of 4.4 tons.(29)

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Equipment in the Novo-Tagil'skiy Metallurgical Plant in Nizhniy Tagil, Sverdlovsk Oblast, is in accordance with the latest technology. Furnaces are controlled by special control and measuring apparatus. Reversal of the air and gas valves and regulation of the pressure in the working part of the furnace is done automatically. Charging is done by heavy-duty ground level machines. Automatic temperature control makes it possible to effect the greatest volume of economy in smelting.(30) The recently opened drive for high-speed work methods and better utilization of equipment has had good results at the plant. Open-hearth shop workers have achieved a production of 6.6 tons of steel per square meter of hearth, as compared with 5.75 tons for 1949. In preparation for May Day, the steelworkers have pledged to increase steel production per square meter of hearth to 7 tons and to 8 tons in three furnaces. Some of the leading workers already have chalked up average yields of 9.4 tons of steel.(31)

One of the plant's workers has had particularly outstanding success in high-speed smelting. In cutting down the time for each melt of steel, he has shown thereby that the furnaces in the plant's open-hearth shop are able to be run for three melts per day (24 hours) instead of two. This stakhanovite has obtained 8.17 tons of steel per square meter of hearth, as compared with the planned 6.25 tons (32), and an average of 8 tons for the past 2 months (33). His record melt is 6 hours 35 minutes, with a recovery of 12.65 tons of steel per square meter of hearth. His average consumption of fuel per ton of steel is 118-120 kilograms, as compared with the plan of 195 kilograms. His success has touched off a new competition in Ural enterprises for higher production per unit of equipment.(30)

The blast-furnace shop of the Novo-Tagil'skiy Plant was the first in the Urals to complete the first-quarter plan. Pig-iron smelting has increased 8.5 percent over the same period in 1949.(14) Blast-furnace workers have increased the coefficient for capacity utilization of the furnaces from 0.87 in 1949 to 0.83 at present.(31) In the first quarter, the workers operated the furnace for 3 days on saved raw materials. With the planned coefficient at 0.86, three leading shifts are obtaining a coefficient of 0.71 for capacity utilization of the furnace.(14)

In February, Leningrad and Lithuanian scrap metal officials reported that scrap collection in the two areas is not meeting the established quotas. A. Pulov, director, Leningrad Office of "Glavvtormet" (Main Administration of Secondary Metals), reported that the directors of many enterprises and organizations in Leningrad have been neglecting scrap collections. Collection and reprocessing of scrap metal in many Leningrad machine-building and metal-processing plants are being conducted in a slipshod manner. The enterprises' scrap-processing equipment is inactive or is being operated at less than full capacity. Transport facilities for hauling scrap are not being used effectively because of poor preparations and sorting of scrap in these enterprises. Scrap metal shops in many plants have not been staffed with sufficient workers and specialists. Enterprises continue to pay large fines for delivering scrap which has not been properly processed or sorted. Railroads are not making use of scrap from rails, etc. The Northwest Railroad Okrug has not yet organized the collection, processing, and transport of this type of scrap.

At the same time, the consumers' and industrial cooperatives and "Glavutil'syr'ye" (Main Administration of Utilizable Junk) must make new surveys of conditions in their procurement centers, review the staff of collectors, and put order into the system of registering scrap metal obtained at the centers.(33)

A "Glavvtormet" official has complained that many enterprises in the Lithuanian SSR are not meeting scrap-procurement quotas. Enterprises of the Ministry of Communications, Ministry for Construction, and Ministry of Local Industry continue to lag behind the established procurement plans. Each enterprise is

responsible for ensuring the delivery of its scrap to metallurgical enterprises and delivering small lots of scrap metal to the centers of "Glavvtormet," which are located in all large cities in the republic.(34)

SOURCES

1. Sovetskaya Moldaviya, No 61, 24 Mar 50
2. Sovetskaya Belorussiya, No 58, 19 Mar 50
3. Sovetskaya Latviya, No 67, 19 Mar 50
4. Pravda, No 86, 27 Mar 50
5. Leningradskaya Pravda, No 75, 29 Mar 50
6. Leningradskaya Pravda, No 76, 30 Mar 50
7. Komsomol'skaya Pravda, No 72, 25 Mar 50
8. Komsomol'skaya Pravda, No 69, 22 Mar 50
9. Moskovskiy Komsomolets, No 38, 28 Mar 50
10. Trud, No 76, 30 Mar 50
11. Sovetskaya Latviya, No 66, 17 Mar 50
12. Pravda Ukrainy, No 74, 28 Mar 50
13. Pravda, No 78, 19 Mar 50
14. Krasnaya Zvezda, No 76, 30 Mar 50
15. Pravda, No 79, 20 Mar 50
16. Komsomol'skaya Pravda, No 71, 24 Mar 50
17. Pravda Ukrainy, No 59, 10 Mar 50
18. Pravda Ukrainy, No 69, 22 Mar 50
19. Pravda Ukrainy, No 71, 24 Mar 50
20. Pravda Ukrainy, No 58, 9 Mar 50
21. Pravda Ukrainy, No 72, 25 Mar 50
22. Trud, No 45, 22 Feb 50
23. Kommunist, No 71, 23 Mar 50
24. Leningradskaya Pravda, No 70, 23 Mar 50
25. Krasnaya Zvezda, No 77, 31 Mar 50
26. Leninskoye Znamya, No 60, 22 Mar 50
27. Izvestiya, No 70, 23 Mar 50
28. Komsomol'skaya Pravda, No 75, 29 Mar 50
29. Trud, No 65, 16 Mar 50
30. Izvestiya, No 69, 22 Mar 50
31. Pravda, No 88, 29 Mar 50
32. Leningradskaya Pravda, No 73, 26 Mar 50
33. Leningradskaya Pravda, No 28, 2 Feb 50
34. Sovetskaya Litva, No 29, 3 Feb 50

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